

Building Partnerships on Higher Agricultural Education and Hatching Agribusiness Incubator in Mali

USAID and Higher Education for Development (HED) have embarked on developing a partnership among Mali's agricultural research (Institut d'Economie Rurale-IER) and higher education (Institut Polytechnique Rurale-IPR/IFRA) institutes with two higher education institutes of U.S.A comprising of a Land Grant University in Montana (Montana State University) and a service based University in Minnesota (University of St. Thomas in St. Paul). This partnership is aimed at higher level training of senior agricultural development professionals to establish Agribusiness entrepreneurial Incubator in Mali.

Seven mid-career Malians chosen in a national competition from IER and IPR/IFRA are at present in the US at the partner Universities undergoing degree level training on selected disciplines and agribusiness development. The participants are:

Belco Tamboura, a professor of Agricultural Economics and Entrepreneurship at IPR/IFRA is enrolled in the University of St. Thomas, School of Business, studying Business Communications. He has already taken over the responsibilities of his designated position in the Incubator, coordinating all activities, being sure the activities meet the needs of the majority of Malians, and working with his US mentor team in Montana and Minnesota to identify funding opportunities.

Ms. Assa Kante, Food Scientist and Director of Training at IER is presently conducting her thesis research in Mali. Shea butter production and marketing is her focus. Assa is implementing a program with Malian shea production cooperatives to improve quality sufficiently to attract European / American buyers in a fair profit return system. Assa, with Montana State undergraduate partners developed a poster series and chemical quality analysis kit to help improve shea butter quality produced in Malian villages. Assa Kante is the designated director of the Innovative Outreach Section of the proposed Incubator.

Sidy Ba, professor of hydraulic engineering at IPR/IFRA, is the designated leader of the Engineering section of the Incubator. As such, he will be helping with the hatch of the Shea Butter Initiative by helping Malian entrepreneurs develop improved nut and butter storage facilities using evaporative cooling systems, a village level, and sustainable technology. Developed by University of St. Thomas undergraduates and their professors for the Mali Community Learning and Information Centers (CLICs), a prototype is currently being tested in Mali by Mr. Ba and his mentor at University of St. Thomas with help from the local Peace Corps volunteer. Also, for his thesis in Environmental Engineering at Montana State, Sidy Ba is exploring the use of wetland filtration techniques for water purification, particularly in the inland delta region near Mopti.

Aissata Thera, an IER plant pathologist, and Adama Berte, an IPR/IFRA professor of plant pathology, are both at Montana State, learning how to set up a certified, disease-free, seed potato laboratory and inspection services. Mme. Thera is focusing her thesis on solving the bacterial wilt, *Ralstonia solanarum*, problem currently threatening potato production in Mali, particularly in finding non-susceptible rotational crops. Mr. Berte will focus his research on selecting varieties resistant to bacterial wilt, a soil-borne microbe; and potato varieties suited to tropical conditions that will be readily consumed by Malians.

Abdoulaye Camara, a microbiologist at IER, is also at Montana State University. His research will focus on more basic questions of soil microbiology and how the widespread use of soil treatments, such as neem extracts and mulches, change the community of soil microorganisms, plant pathogens, and human pathogens.

Keriba Coulibaly, an IER crop scientist, is at Montana State learning plant molecular genetics and insect bioassay techniques to help him select cowpea varieties for Mali that will protect cowpeas during

long-term storage. Cowpeas, an excellent source of protein, are the “meat of the poor” in Mali, but, if not protected from the bruchid beetle, *Callosobruchus maculatus*, quickly disappear during storage. As a result, the period before cowpea harvest, July and August, is known as the Hunger Period. Mr. Coulibaly is taking an integrated approach trying to make cowpeas available throughout the year. He collaborates with IER food scientists, Malian public and private schools, the Peace Corps, and a Native American tribal college, Chief Dull Knife College.

These last four scientists, Thera, Berthe, Camara, and Coulibaly, constitute the Plant Biotech Section of the Incubator. The Plant Biotech Section along with the Engineering Section, the Innovative Outreach Section and the Director comprise the actual Incubator linked to scientists, engineers and other faculty from the four partner institutions. The Incubator is being built from a cadre of closely knit people, scientists, engineers and other faculty, from these four partner institutions.

The courtship between these partners began with a mutual recognition of key development challenges facing the Malian agricultural sector. These challenges include: disconnect in teaching, research, and extension among l’Institut d’Economie Rurale (IER) scientists (who do not teach in the classroom), University of Bamako, Institute of Agriculture (IPR/IFRA) (who do not conduct on-farm research), and small-scale, subsistence farmers (who have relatively few forms of regular communication with research and teaching institutions); lack of strong collaboration between IER and IPR/IFRA due to physical separation between institutions; urgent need for farmer-identified problems to be solved; and lack of rapid, widespread dissemination of farmer-generated information.

This courtship is now resulting in the concept of forming a Mali Agribusiness Incubator, a center designed to identify and assist entrepreneurs in agriculture-related efforts. It is expected that the seven Mali participants, on their return from higher training will build the foundation for this Agri-business incubator.

To accelerate the hatching process of the incubator, parallel funding from US University partners, private foundations, and local communities are providing needed warmth and nourishment. For example, parallel funding of three competitive USDA Challenge Grants to US mentors are creating synergy. Two Higher Education Challenge grants provide a venue for undergraduate externs to spark the flow of ideas back and forth with the seven Malians creating the incubator. Meanwhile, a Secondary Education Challenge grant helped link Mali school children’s research experiences with the cowpea initiative in the Incubator and Montana school children’s research experiences with the seed potato and water initiatives in the Incubator.

This program is actually the test of USAID’s single-country model for higher education in Sub-Saharan Africa. This model is a “sandwich” arrangement. Year one focused on selecting Malian participants and developing a customized training program for each applicant. Year Two is resulting in training Malian participants at US partner universities. Year Three will result in the transfer of training knowledge from participants to their home institutions through development of expanded laboratory projects and creation of new extension programs/Agricultural Innovation centers and a process for identifying potentially successful entrepreneurs and encouraging them to develop clusters of small enterprises. These clusters will be particularly focused on initiatives such as 1) quality management of shea butter production and storage for export and development of a high quality US/Canadian market; and 2) initiation of a certified seed potato cluster of enterprises for regional export. Two additional foci that will continue to be developed in Year 3 are: 1) improving protein availability in subsistence farming communities, primarily through reduction of post harvest cowpea losses; and 2) improving water quality and quantity for individual households.

The ultimate goal of this partnership for higher education is to facilitate integration of modern technologies into Malian agriculture in the manner they deem most fitting. The program is being directed by: Dr. Florence Dunkel, Professor of Entomology, Montana State University.